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THE TIMES OF INDIA

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TODAY'S EDITION

➤ Board exams may have been cancelled/postponed. But keep solving sample papers, exclusively prepared by your teachers
PAGE 2

➤ Subjects like maths, geography, and chemistry can be interesting, if presented in simple ways. Our experts tell us how
PAGE 3

➤ IPL match preview: Can CSK's bowling rein in Punjab's formidable batting?
PAGE 4

STUDENT EDITION

FRIDAY, APRIL 16, 2021

TIMES nie Newspaper in Education

WEB EDITION

CLICK HERE: PAGE 1 AND 2

FACTOID

$1.25 BILLION

That's the loss that the Indian economy has to bear per week, courtesy the surge in pandemic cases, which has forced many states to curb mobility and businesses, according to the British brokerage Barclays. If the current restrictions remain in place until May-end, the cumulative loss of economic and commercial activity could be around **$10.5 billion.**

1 Around 60 per cent of the economy is subject to mobility restrictions now, the report said, with key economic hubs of Maharashtra, Gujarat, Tamil Nadu and Rajasthan, witnessing rising cases and falling mobility

2 Among all the major infection hotspots, the worst hit are Mumbai and Pune

3 As regards Maharashtra, which contributes **to over 16 per cent to the national GDP**, the mobility curbs put in place in the wake of rising cases, will take a dip in the gross value added to the growth by 0.32 % at the national economy level this fiscal, a recent Care Ratings report said

14 TONS

The amount of inter-planetary dust that lands on the Earth every day, according to a new report. Rich in iron and nickel, the vast majority of these particles come from the passing comets and asteroids, and amount to more than 5,000 tons each year

SIZE

Each of these micrometeorites, as they're known, are minuscule – from a few tenths to hundredths of a millimetre

WHERE DO THEY COME FROM?

Most extra-terrestrial particles burn up in our atmosphere. While some pass through as shooting stars, a small amount reach the ground as micrometeorites. Around 80 per cent of micrometeorites come from comets, with the remainder from asteroids

ARE THEY A THREAT TO OUR PLANET?

■ NO. Scientists are of the view that these particles do not pose a threat to our world, rather they are of the view that understanding these particles can provide an insight into the primitive solar system that birthed them

DID YOU KNOW?

To determine just how much of these particles reach the Earth's surface, nuclear physicist Jean Durant led six expeditions over the last 20 years to the Franco-Italian Concordia station in Antarctica, aka Dome C, about 1,000 miles from the South Pole, and 680 miles off the coast of Adélie Land. Dome C is an ideal collection spot, as it has a near absence of terrestrial dust

Spotlight

CICSE says reviewing situation, will soon decide on conducting class X, XII Board exams

The Council for the Indian School Certificate Examinations (CISCE) on Wednesday said that it is reviewing the Covid-19 situation and will soon take a decision on conducting the class X and XII Board exams. The CICSE announcement comes following the CBSE's decision to cancel class X exams and postpone class XII papers, in view of the surge in Covid-19 cases.

The International Baccalaureate (IB) has decided to cancel the board exams in India. Students, however, will be promoted, based on a special assessment system

IPL QUIZ

How many times has MS Dhoni been dismissed for zero in IPL?

FOUR

Recently, CSK captain MS Dhoni, while batting against Delhi Capitals in IPL 2021, got out on the bowling of Avesh Khan for zero. This was Dhoni's fourth duck in the history of IPL, and first since IPL 2015. Harbhajan Singh (2015), Dirk Nannes (2010), and Shane Watson (2010), are the other bowlers to dismiss Dhoni for a duck

Pets eased children's LONELINESS IN lockdown: Study

Petlife

Family pets help children to better manage the feelings of stress and loneliness, which have been greatly exacerbated by virtual schooling as a result of the pandemic, shows a new survey. The Mars Petcare survey of parents reveals that more than eight in 10 parents found that their family pet helped their child feel less lonely during the lockdown, with more than three-quarters feeling that day-to-day interactions with their cat or dog reduced their child's stress and anxiety. Parents agreed that their pet supported their child during the unprecedented break from in-person schooling by improving their mood, providing companionship and giving them the much-needed emotional support.

1 For many families navigating the stress and challenges of home-schooling, pets have offered children crucial support

2 The survey also found that pets positively impacted a child's experience of virtual learning and academic performance across all the ages – with nine in 10 parents seeing improvements in their child's emotional, social and core skill development, including having more energy and improved concentration, providing a fun topic of conversation to engage with their classmates and teachers, and giving them a much-needed break, away from the screen

3 This increased bond between children and their pets has many benefits for the pet too. Three-fourth believed their pet is also calmer now, as they spend more time with their child

DID YOU KNOW?

According to UNICEF, at least 1 in 7 children – or 332 million globally – has lived under nationwide stay-at-home policies for at least nine months since the start of the Covid-19 pandemic, putting their mental health and well-being at risk

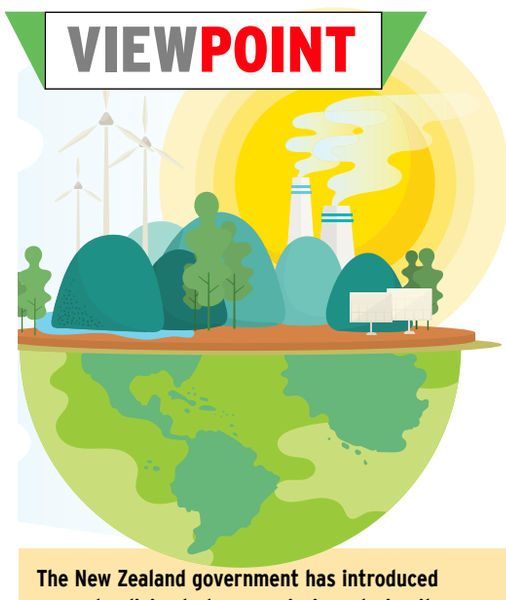
OLLY ALEXANDER'S SET TO RELEASE HIS 'BEST' SONGS

Singer Olly Alexander, who was part of the band 'Years & Years' with Mikey Goldsworthy and Emre Turkmen, will soon be sharing some of his unreleased songs. He also wants to offer these to other artistes, so that they can do something creative with these songs. "Some of the songs, I never wanted to throw them away, as they still are my babies and I still like parts of them. Maybe another artiste would listen and like it, and want to do something like their own thing, so I've kept a lot of them. "But, to be honest, the ones that are the best ones, I'm going to put them out," he said.

Alexander just released the single 'Starstruck' as his first project after the band split

New Zealand introduces climate change law for financial firms in world first

VIEWPOINT



The New Zealand government has introduced several policies to lower emissions during its second term, including promising to make its public sector carbon-neutral by 2025, and buy only zero-emissions public transport buses from the middle of this decade

New Zealand has become the first country in the world to introduce a law that will require banks, insurers and investment managers to report the impacts of climate change on their business, minister for climate change James Shaw said.

■ All banks with total assets of more than NZ$1 billion ($703 million), insurers with more than NZ$1 billion in total assets under management, and all equity and debt issuers listed on the country's stock exchange will have to make disclosures ■ "We simply cannot get to net-zero carbon emissions by 2050 unless the financial sector knows what impact their investments are having on the climate," Shaw said in a statement ■ "This law will bring climate risks and resilience into the heart of financial and business decision-making," he added ■ The bill requires financial firms to explain how they would manage climate-related risks and opportunities

Q Is it a good move? Should other countries follow suit? Share your views at toinie175@gmail.com

VARANASI TO BE KNOWN AS SANSKRIT CITY

Varanasi, the parliamentary constituency of Prime Minister Narendra Modi, will now be known as the Sanskrit city in the world. Varanasi has the maximum number of Sanskrit schools as well as the highest number of students studying Sanskrit.
There are more than 110 Sanskrit schools that are functional in Varanasi.

NAMESAKE

More than 97,000 students are studying in these Sanskrit schools. In order to connect Sanskrit schools with modern education, the computer education and NCERT books are being provided to students from classes VI to XII

SHARE YOUR VIEWS AT TOINIE175@GMAIL.COM

GET ALL DUCKS IN A ROW BEFORE MATH EXAM

EXAMS R fun

CLASS: X - 2020-21

SUBJECT: MATHEMATICS (CBSE)

Maximum Marks: 80

Time Allowed: 3 Hours

GENERAL INSTRUCTIONS

1. This question paper contains two parts A and B.
2. Use of calculator is not permitted.

PART A:

- Section I has 16 questions of 1 mark each.
- Section II has 4 questions on case study. Each case study has 5 case-study based questions sub-parts. An examinee is to attempt any 4 out of 5 sub-parts.

PART B:

- Question No. 21 to 26 are Very short answer questions of 2 marks each.
- Question No. 27 to 33 are Short Answer Type questions of 3 marks each.
- Question No. 34 to 36 are Long Answer Type questions of 5 marks each.

PRACTICE PAPER SET BY ANITA SHEKHAR, DELHI PUBLIC SCHOOL, SECUNDERABAD

PART-A (SECTION-I)

Q1. Without actually performing the long division, find if $\frac{987}{10500}$ will have terminating or non-terminating (repeating) decimal expansion. Give reasons for your answer.

Q2. If α and β are the zeroes of the polynomial ax^2+bx+c, find the value of $\alpha^2+\beta^2$.

Q3. What is the point of intersection of the graph of $\frac{x}{a}+\frac{y}{b}-2=0$ with the x–axis and y–axis respectively?

Q4. For what value of k, the pair of equations 4x–3y=9, 2x+ky=11 has no solution?

Q5. The angles of a triangle are in A.P., the least being half the greatest. Find the angles.

Q6. Find the roots of $\sqrt{2}x^2+7x+5\sqrt{2}=0$ by factorisation.

Q7. Find the nature of the roots of $2x^2-6x+3=0$

Q8. If TP and TQ are the two tangents to a circle with centre O so that ∠POQ =140° then what is the measurement of ∠PTQ.

Q9. The length of the tangent from a point A at a distance of 13 cm from the centre of the circle is 12 cm. Find the radius of the circle.

Q10. Areas of two similar triangles are 36 cm² and 100 cm². If the length of a side of the larger triangle is 20 cm, then what is the length of the corresponding side of the smaller triangle?

Q11. To draw a pair of tangents to a circle which are inclined at an angle of 60°. At which angle are the two radii inclined to each other, at the ends of which tangents are required to be drawn?

Q12. If sec θ + tan θ = 7, then evaluate sec θ – tan θ.

Q13. Given 2cos (3θ)=$\sqrt{3}$, find the value of θ.

Q14. What is the area of the circle that can be inscribed in a square of side 6 cm?

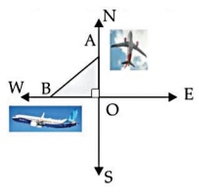
Q15. Two tanks are of the same capacity. The dimensions of the first tank are 12 cm x 8 cm x 4 cm. The second tank has a square base with depth 6 cm. Find the side of a square.

Q16. A number x is selected at random from the numbers 1, 4, 9, 16 and another number y is selected at random from the number 1, 2, 3, 4. Find the probability that the value of xy is more then 16.

(SECTION-II)

Case study based questions are compulsory. Attempt any four sub parts of each question. Each subpart carries 1 mark.

Q17. Case study based-1:
Mohan went to Airport two and half hours before departure time. He observes that an aeroplane leaves an airport and flies due north at a speed of 1000 km per hour. At the same time, he observes another aeroplane leaves the same airport and flies due west at a speed of 1200 km per hour. After departure of two aeroplanes, now he is rough sketch of drawing the four directions along with aeroplanes pictures given below:

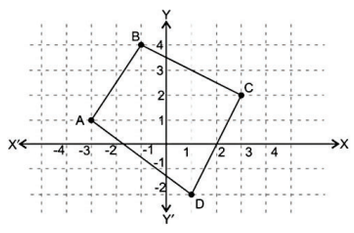


(i) What is the distance travelled by aeroplane towards north after 1½ hours?
A) 1000 km **B)** 1200 km
C) 1500 km **D)** 1800 km
(ii) What is the distance travelled by aeroplane towards west after 1½ hours?
A) 1000 km **B)** 1200 km
C) 1500 km **D)** 1800 km
(iii) ∠AOB is
A) 90° **B)** 45° **C)** 30° **D)** 60°
(iv) How far apart will be the two planes after 1½ hours?
A) $\sqrt{2250000}$ B) $\sqrt{3240000}$
C) $\sqrt{6250000}$ D) $\sqrt{5490000}$
(v) The given problem is based on which concept?
A) Triangles **B)** Trigonometry
C) Coordinate geometry **D)** Statistics

Q18. Case study based-2:
Aditya works as a librarian in Bright Children International School in Indore. He ordered for books on English, Hindi and Mathematics. He received 96 English books, 240 Hindi Books and 336 Math books. He wishes to arrange these books in stacks such that each stack consists of the books on only one subject and the number of books in each stack is the same. He also wishes to keep the number of stacks minimum.

Based on the above situation, answer the following questions.
(i) Find the number of books in each stack.
(A) 24 **(B)** 48 **(C)** 54 **(D)** 72
(ii) Find the total number of stacks formed.
(A) 7 **(B)** 10 **(C)** 14 **(D)** 16
(iii) How many stacks of mathematics books will be formed?
(A) 7 **(B)** 8 **(C)** 9 **(D)** 10
(iv) If the thickness of each English book is 3 cm, then the height of each stack of English books is
(A) 120cm **(B)** 124cm **(C)** 136cm **(D)** 144cm
(v) If each Hindi book weighs1.5kg, then find the weight of books in a stack of Hindi books.
(A) 24kg **(B)** 48kg **(C)** 72kg **(D)** 96kg

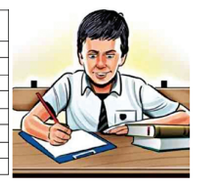
Q19. Case study based -3:
Four students A, B, C and D are visited a Park on Sunday along with their Mathematics teacher. The teacher instructed all four students to attempt sample paper test 06. They are sitting at the corners of a park, which is in the shape of a quadrilateral and started solving the test paper.



Please give answers to these questions.
(i) Write the coordinates of A and B.
(A) A(–3, 1), B (1, 4) **(B)** A(–3, 1), B(–1, 4)
(C) A(3, 1), B(–1, 4) **(D)** A(–3, –1), B(–1, 4)
(ii) Write the coordinates of C and D.
(A) C(–3, 2), D(1, 2) **(B)** C(–3, 2), D(1, 2)
(C) C(3, 2), D(–1,–2) **(D)** C(3, 2), D(1,–2)
(iii) Distance of point A from the origin is:
(A) √10 **(B)** √20 **(C)** √15 **(D)** √13
(iv) The distance from A to B is:
(A) √15 **(B)** √13 **(C)** √7 **(D)** √5
(v) Which of the following may be true if B, C and D become collinear?
(A) BC = CD + BD **(B)** BC = AC + CD
(C) CD = BC + AB **(D)** none of these

Q20. CaseStudybased-4:
In a school, class XB and XC students appeared for Sunday sample paper test and marks obtained out of 80 are formulated in a table as follows:

Marks	Number of students
Lessthan10	8
Lessthan20	20
Lessthan30	30
Lessthan40	50
Lessthan50	60
Lessthan60	70
Lessthan70	75
Lessthan80	80



(i) How many students secured less than 40 marks?
(A) 50 **(B)** 40 **(C)** 60 **(D)** 30
(ii) What is the upperlimit of modal class?
(A) 20 **(B)** 30 **(C)** 40 **(D)** 50
(iii) The median class is:
(A) 10-20 **(B)** 20-30 **(C)** 30-40 **(D)** 40-50
(iv) The mean marks of the students is:
(A) 35.8 **(B)** 35.9 **(C)** 36 **(D)** 36.5
(v) Class mark of the class preceding the modal class is:
(A) 35 **(B)** 30 **(C)** 25 **(D)** 45

PART-B

All questions are compulsory. In case of internal choices, attempt any one. Each question carries 2 marks.

Q21. Find the zeroes of the quadratic polynomial $p(x) = 4x^2 - 3x - 1$ and verify the relationship between the zeroes and the coefficients.

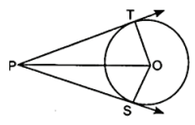
Q22. Prove that points (7, 10), (–2, 5) and (3, –4) are the vertices of an isosceles right triangle.

Q23. A quadratic polynomial $2x^2-3x+1$ has zeros as α and β. Form a quadratic polynomial whose zeros are 3α and 3β.

Q24. Draw a circle of radius 6 cm. From a point 10 cm away from its centre, construct a pair of tangents.

Q25. Prove that (cosecA – sinA) (secA – cosA)_ = $\frac{1}{\tan A+\cot A}$

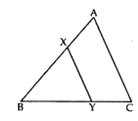
Q26. In given figure, from a point P, two tangents PT and PS are drawn to a circle with centre O such that ∠SPT = 120°, Prove that OP = 2PS.



Q27. Prove that is $\sqrt{5}$ an irrational number.

Q28. Solve the following quadratic equation for x: $4x^2 - 4a^2x + (a^4 - b^4) = 0$.

Q29. In the given figure, the line segment XY is parallel to the side AC of ΔABC and it divides the triangle into two parts of equal areas.



Find the ratio of $\frac{AX}{AB}$

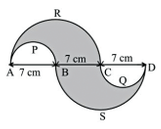
Q30. The mean of the following frequency distribution is 62.8. Find the missing frequency x.

Class Interval	Frequency
0-20	5
20-40	8
40-60	x
60-80	12
80-100	7
100-120	8

Height (in cm.)	No. of Girls.
Less than 140	4
Less than 145	11
Less than 150	29
Less than 155	40
Less than 160	47
Less than 165	52

Q31. A survey regarding the heights (in cm) of 52 girls of class-X of a school was conducted and the following data was obtained. Find the median height.

Q32. In the given figure, APB and CQD are semi-circles of diameter 7 cm each, while ARC and BSD are semicircles of diameter 14 cm each. Find the perimeter of the shaded region.



Q33. The horizontal distance between two pillars of different heights is 150 m. The angle of depression of the top of the first pillar when seen from the top of the second pillar is 30°. If the height of the first pillar is 60 m, find the height of the second pillar.(Use $\sqrt{3}$ =1.732]

Q34. Draw the graphs of the following system of linear equations on the same graph paper: 2x – y = 1, x + 2y =13. Find the coordinates of the vertices of the triangle formed by the two straight lines and the y – axis and the area enclosed by the triangle thus formed.

Q35. A 1.2 m tall girl spots a balloon moving with the wind in a horizontal line at a height of 88.2 m from the ground. The angle of elevation of the balloon from the eyes of the girl at any instant is 60°. After some time, the angle of elevation reduces to 30°. Find the distance travelled by the balloon during the interval. (Use $\sqrt{3}$ = 1.732]

Q36. Sushant has a vessel, of the form of an inverted cone, open at the top, of height 11 cm and radius of top as 2.5 cm and is full of water. Metallic spherical balls each of diameter 0.5 cm are put in the vessel due to which 2/5 th of the water in the vessel flows out. Find how many balls were put in the vessel.

EXAMS R fun

MOCK PAPER
SUBJECT: PSYCHOLOGY (CBSE)
CLASS XII
MARKS: 70

BE POSITIVE IN PSYCHOLOGY

PAPER SET BY TARANJIT DAVE, PGT PSYCHOLOGY, UDGAM SCHOOL, AHMEDABAD

SECTION-I

Q1. Koh's block design test is an example of _____ test of intelligence. [1]

Q2. Children with high _____ self-esteem are more liked by their peers. [1]

Q3. Worries and stress can manifest as frightening, painful sensation which could be mistaken for heart attack. (T/F) [1]

Q4. Which of the following is true of depression? [1]
a) It affects men more frequently than women.
b) It is a component of Dissociative Identity Disorder.
c) It is caused by low activity of serotonin.
d) It is more prevalent among the wealthy than the poor.

Q5. The Vietnam war which led to the loss of many American and Vietnamese lives, is an example of _____. [1]

Q6. The Nazis committed atrocities against the Jews. This is an example of _____ . [1]

Q7. Dr. Joshi, a Neurosurgeon, would be high on _____ intelligence, according to Howard Gardner. [1]

Q8. Mr. Bakshi lost his wife recently due to pandemic. However, every single day he calls her on the mobile hoping for her to answer his call. He is in the _____ phase of ego defence mechanism. [1]

Q9. Shivam is being provided with books and uniforms by the school. He is receiving _____ kind of support. 1

Q10. Sanjana doesn't seem to enjoy many activities lately. She stays in bed most of the day, doesn't eat properly and shows no interest in interacting with her family or friends. If these symptoms continue for more than 2-3 weeks, she will be at risk of being diagnosed with _____. [1]

Q11. Whenever Raj walks out of his office feeling stressed, he goes out drinking with his friends that evening. He would feel a bit relaxed after having drunk, and hence, this behaviour became a pattern with him. Over time, he developed the habit of taking to alcohol on facing even a minute stressor in his life, as alcohol was something that helped him relax. The antecedent factor in Raj's life is _____ and the maintaining factor is _____. [1]

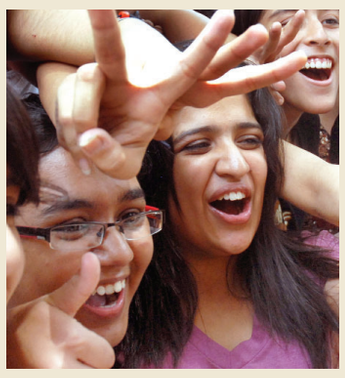
Q12. The _____ mode of message transmission is more effective in bringing about an attitude change. [1]

Q13. Learning alphabets and digits is an example of simultaneous processing. (T/F) [1]

Q14. Rohit recently got a heart attack. Rohit's wife reported that he is high on motivation and a go getter. However, the downside is that he is always in a hurry, lacks patience and feels burdened with work. Rohit would be categorised as having _____ personality type. [1]

SECTION-II

Q15. Read the case and answer the questions that follow: [1x3=3]
A 27-year-old, Yash, an athletic young man, has an intense fear of needles. He tries to rationalize his fear by explaining that he is just being cautious and protecting himself from acquired immunodeficiency disease syndrome (AIDS). He realises that his fear is irrational but is unable to control it. The patient has fainted twice in the past when his blood was drawn during a physical examination. He becomes ex-



tremely anxious at the sight of a needle and worries for days before an appointment with his physician or dentist.
I. Identify Yash's disorder. [1]
II. Name the category of this disorder. [1]
III. Name the other sub types of this category of disorder. [1]

Q16. Read the case and answer the questions that follow: [1x4=4]
Heena is a registered nurse in a busy emergency room. She deals with life and death situations regularly at work without missing a beat. She finds that if she does not take time out occasionally for herself by exercising and spending time with her family and friends, she is not quite as effective as she would like to be. But she thinks it is really nothing to worry about.

One day, however, she receives a phone call at work to find out that her father has had a stroke. Initially, Heena takes it in stride and tells herself 'everything will be fine.' After three months of physical therapy in a long-term care unit, Heena decides that her father will have to come and live with her and her family, so she can help care for him daily.

She notices that she is not sleeping well. One day at work, she unintentionally makes a critical mistake and gives a patient the wrong medication. She decides she needs help to care for her father and hires an agency that provides home visits to take care of her father four times a week.

With this small amount of extra time, Heena makes self-care a priority and begins exercising and meditation regularly. After a short time, Heena begins to feel more like herself and finds that she responds to the stress in a more productive way. She begins to have a better relationship with her father and family and is regaining her confidence at work as well.
i. What was the source of Heena's stress? [1]
ii. She notices that she is not sleeping as well. One day at work, she unintentionally makes a critical mistake and gives a patient the wrong medication. Which stage of the General Adaptation Syndrome model was Heena in? [1]
iii. Which set of words best describe Heena's hardiness? [1]
iv. With this small amount of extra time, Heena makes self-care a priority and begins exercising and meditation regularly. Identify the coping strategy used by Heena. [1]

SECTION-III

Q17. Discuss the main limitation of Hans Selye's model of stress. [2]

Q18. Nisha is experiencing generalised anxiety disorder. Enumerate any two causes with reference to diathesis stress model which may have led to the disorder. [2]

Q19. What is separation anxiety disorder? List any two symptoms. [2]

Q20. Elucidate any 2 techniques to help you deal with exam stress. [2]

Q21. Enumerate any 4 characteristics of a group. [2]

Q22. What are the ethical considerations that need to be followed by psychotherapists? [2]

SECTION-IV

Q23. Anu is a good dancer who is well adjusted in school as she cooperates with her teachers and classmates in all school related activities. She is also liked by friends and family. Identify and explain the types of intelligences that Anu is exhibiting. [3]

Q24. Explain Allport's Trait Theory. [3]

Q25. Explain the concept of cognitive dissonance with example. [3]

SECTION-V

Q26. Sheldon is an eight year old who has profound difficulty in relating to other people. Often, he is found to be unresponsive to other people's feelings and exhibits stereotypical patterns of behaviour. Identify this disorder and describe its features. [4]

Q27. Prisha has been feeling anxious and depressed. She is convinced that no one loves her and that it would be very difficult for her to succeed. How will Beck's cognitive therapy help her deal with her negative thoughts? [4]

Q28. Your friend eats too much junk food. How would you be able to bring about a change in her/his attitude towards food using concept of balance? [4]

Q29. Your class has been allocated the responsibility of putting up a cultural show for the special assembly in which you have to showcase about 5-6 performances. Describe the stages of group formation that your classmates will go through. [4]

SECTION-VI

Q30. Elaborate the theories based on psychometric approach. [6]

Q31. Disccuss Freudian 5-stage theory of personality development.[6]